

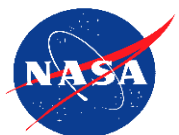


FAA/NASA UAS Traffic Management Pilot Program (UPP)

**Industry Conference Call
January 31, 2018**

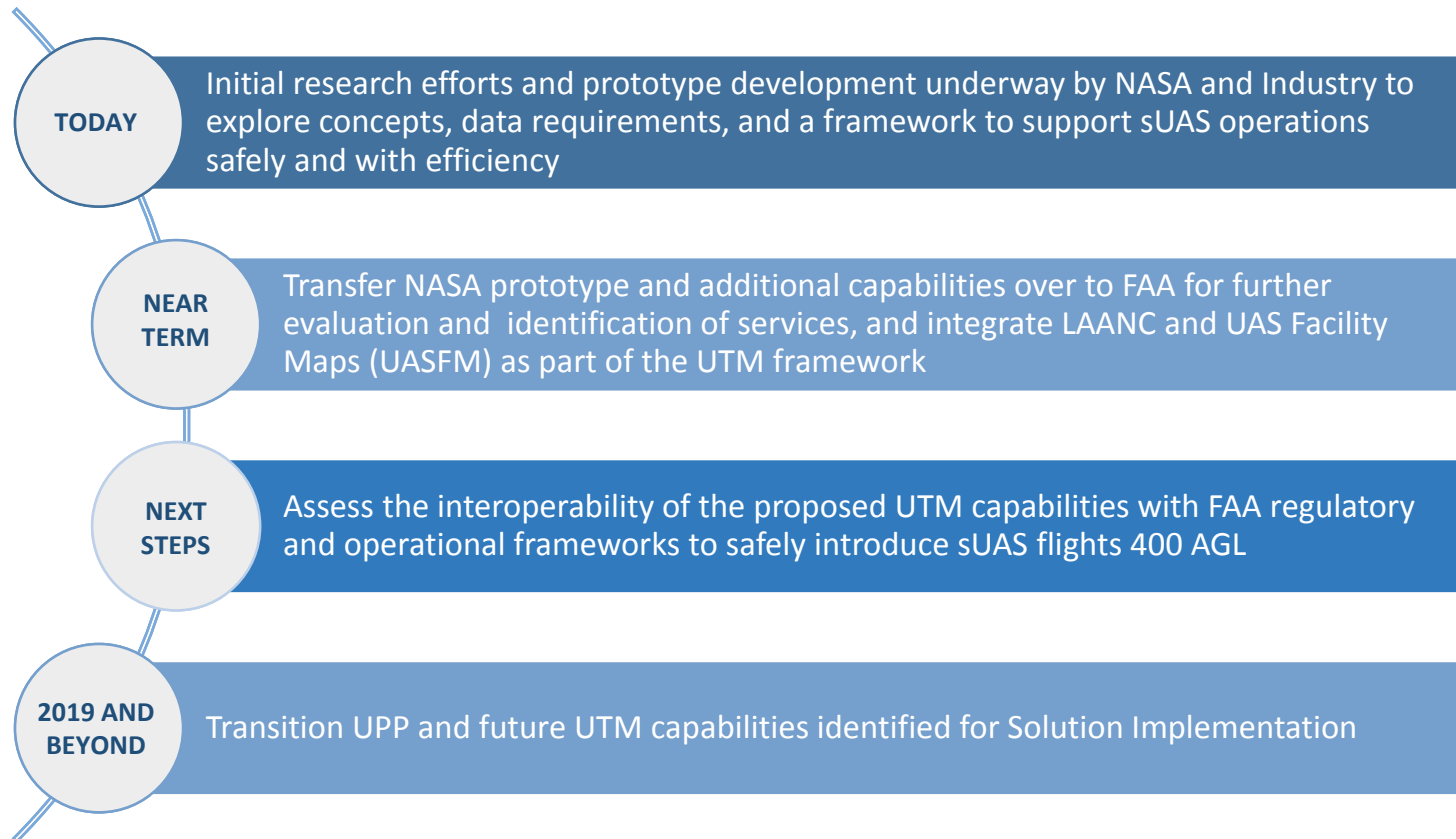
Agenda

- Introductions
- UTM Vision and Ecosystem
- UTM Pilot Program (UPP) Overview
- UPP High-Level Operational Concept
- Preliminary UAS Service Supplier (USS) Selection Criteria
- USS Engagement Timeline
- Next Steps for Participation in UPP
- Questions & Answers



UAS Traffic Management (UTM) Vision

UTM is a traffic management “ecosystem” for UAS operations that is separate, but complementary to FAA’s Air Traffic Management (ATM) system



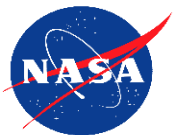
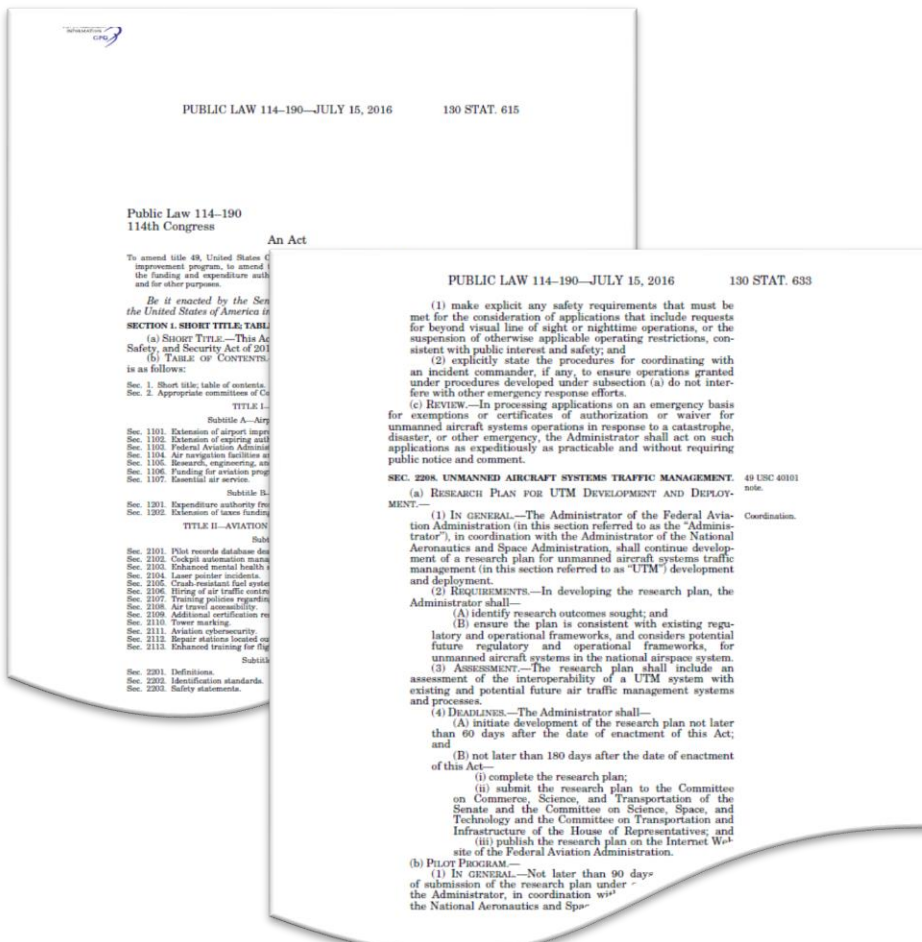
UTM Pilot Program (UPP) Overview

UTM Pilot Program

FAA Extension, Safety & Security Act of 2016

Directs coordination / collaboration, development, and publication of a Unmanned Aircraft Systems Traffic Management (UTM) Research Plan and establishment of a UTM System Pilot Program. Pub. L. 114-190 § 2208 (July 15, 2016)

UPP shall be completed not later than two (2) years following its establishment.

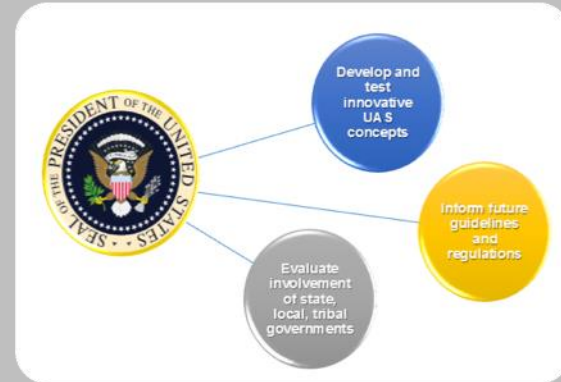


How Does UPP Complement IPP?



UAS Traffic Management Pilot Program (UPP)

- Congressional directive for FAA and NASA to partner in order to advance safe sUAS Integration at the lower altitudes through traffic management
- Forum for industry collaboration with NASA and FAA to evaluate and demonstrate UTM technologies and capabilities
- Development of enterprise capabilities, testing, and evaluation leading up to a successful UPP demonstration



UAS Integration Pilot Program (IPP)

- Presidential directive for the Secretary of Transportation and FAA to create a partnership framework for private sector and state/local/tribal governments to achieve broader national policy
- Advances UAS industry by informing regulations that permit more complex, demand-driven UAS operations
- Pushes the boundaries of UAS use by expanding what is routinely authorized under the sUAS rule

UPP Objectives

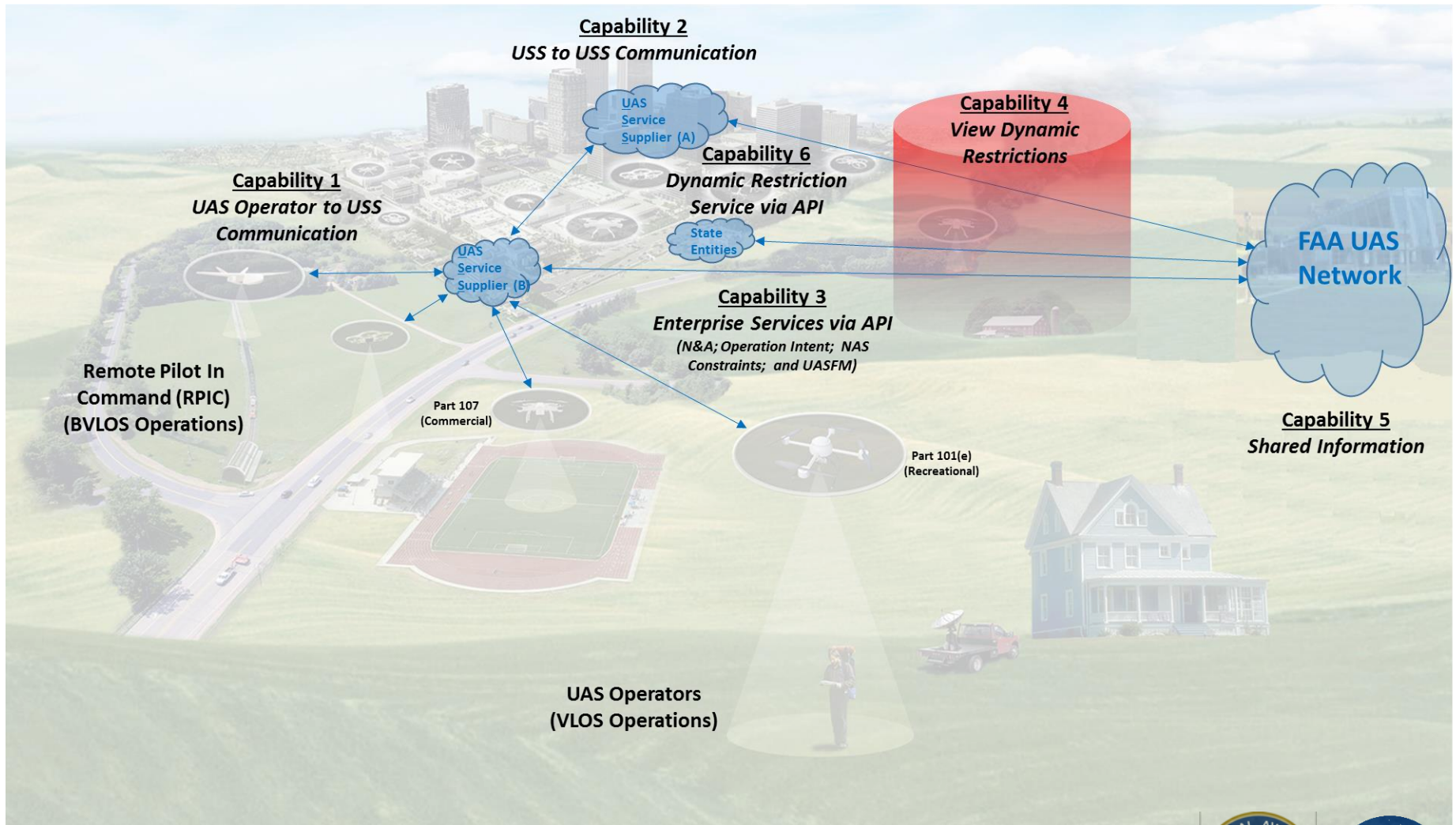
The UPP, and activities leading up to the demonstration event(s) planned in early 2019, are an important component of identifying the initial set of industry and FAA capabilities required to support UTM operations



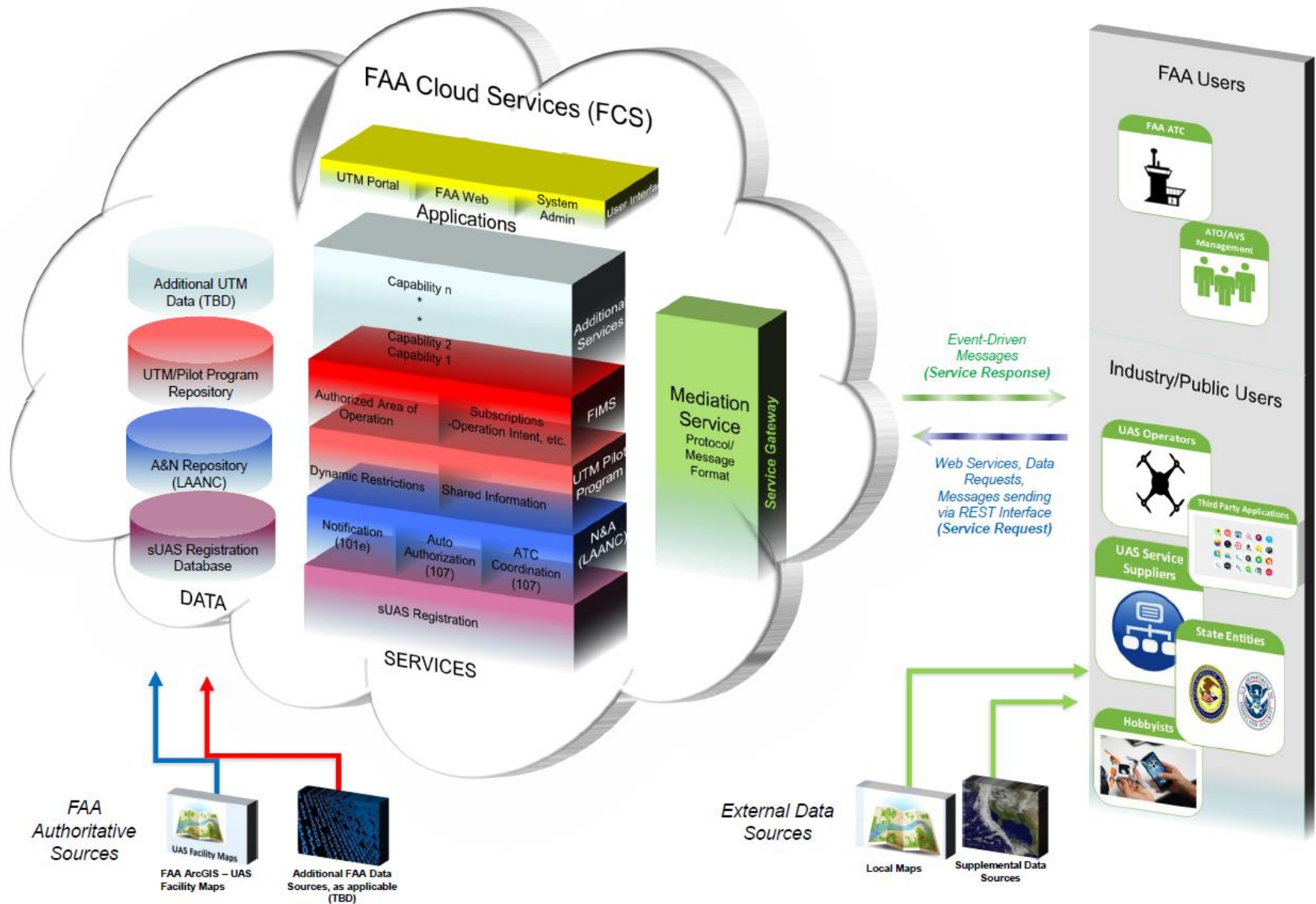
Goals

- Demonstrate the initial integrated UTM ecosystem comprised of UTM Services, Low Altitude Authorization & Notification Capability (LAANC) services for USS, and UAS Operators sharing intent and information collaboratively
- Demonstrate Dynamic Restrictions capability and the automation of parts 101(e) and 107 notifications & authorization
- Provide an understanding of the level of investment required for stakeholder implementation
- Final Report documenting UTM Pilot Program findings to further mature UTM

UPP High-Level Operational Concept



UTM Ecosystem



UPP Actors & Roles

FAA/NASA

- Federal Authority over the National Airspace (NAS) including all UTM operations and policies
- Responsible for management, integration, and testing of the UPP and its components

UAS Service Suppliers

- Assists in developing API to support program execution
- Participates in end-to-end demonstration
- Manages UAS Operator
- Manages UAS Operator to USS interface with guidance as provided in UAS Operator ICD
- Collaborate with FAA/NASA to inform industry's role at federal level

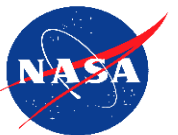
UPP

UAS Operator/RPIC

- Responsible for overall management of their UTM operations, meeting regulatory responsibilities, flight/operations planning, and exchange information with the USS

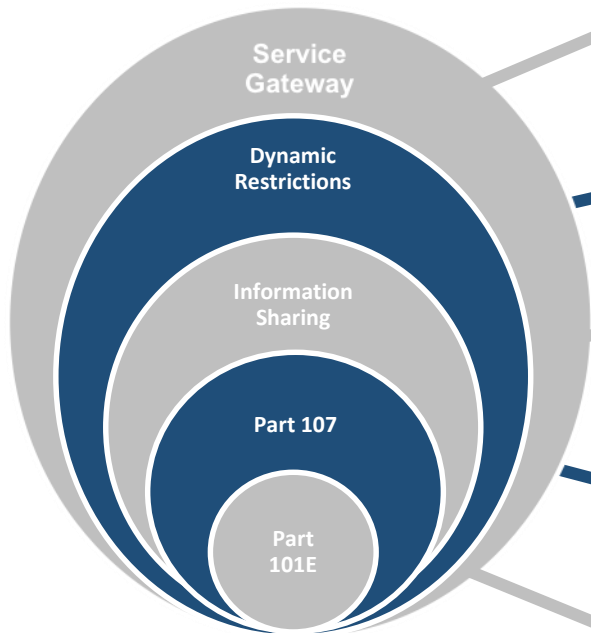
UPP Test Sites

- Hosting of on-site flight tests
- Review and approval of flight test safety case, required licenses, and certifications
- Coordination and assistance with stakeholder needs during field testing



UPP Capabilities & Requirements

UTM Pilot Program Capabilities



Technical/Functional Requirements

Requirements to support:

- message construction
- message routing
- message transformation

Requirements for temporary restriction of UAS operations in a defined area

Requirements for information sharing with FAA and UAS operators

Requirements for authorization information and UAS facility maps with FAA

Requirements for the FAA to receive notifications from Part 101(e) operators

Checkout Requirements

USS establishes appropriate connectivity to the **FAA gateway for mediation services** (i.e., Service Gateway)

USS demonstrates compliance with **dynamic restrictions** capability

USS enables **information sharing** between FAA, UAS operators, and multiple USSs, as applicable

USS ability to receive **Part 107 authorization** requests from subscribing UAS Operators, and USS receive facility map information

Have tools that allow UAS operators to create **Part 101(e) notifications**, and USSs ability to receive the notifications

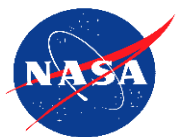
UPP Business & Technical Requirements

USS Business Requirements

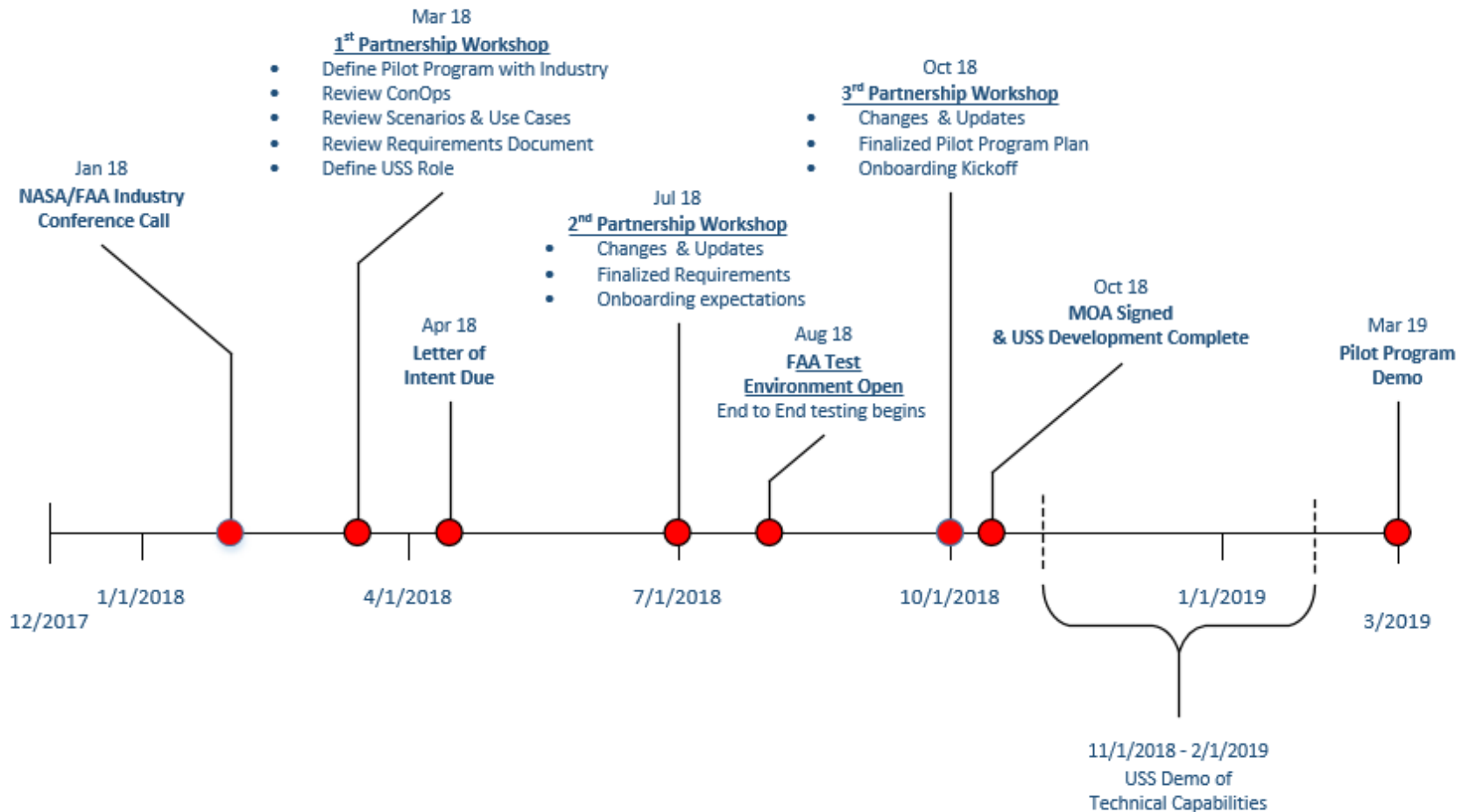
- Signed Letter of Intent to participate in UTM Pilot Program (UPP)
- Participation in UPP Partnership Workshops
- Signed Memorandum of Agreement (MOA)
- Establish and manage the relationship with UAS Operator(s)

USS Technical Requirements

- USSs must demonstrate a developed API with the following technical capabilities:
 - Ability to receive information from subscribing UAS operators
 - Ability to receive Part 107 authorization requests
 - Ability to receive and translate UAS facility map information
 - Allow UAS operators to create Part 101(e) notifications
 - Enable information sharing between FAA, UAS operators, and multiple USSs, as applicable
 - Ability to issue and communicate a dynamic restriction
 - Connectivity to the FAA service gateway for mediation services
 - USS tracking of subscribing BVLOS UAS real-time position data
 - Establish and manage the interface with UAS Operator(s)



USS Engagement Timeline



Next Steps

Join us for the 1st UPP Industry Workshop:

- FAA/NASA UPP 1st Industry Workshop
March 15, 2018
NASA Ames Research Center, Moffett Field, CA

Preliminary Agenda

- Detailed UTM Pilot Program (UPP) Review
- Walkthrough of UPP ConUse
- Review UPP Use Cases and Scenarios
- UPP Requirements Review
- UPP Architecture Overview and Environment
- Define USS and Operator Role
- Discuss Selection Criteria and Checkout Requirements

Test Site Selection Planning Efforts Underway

- Additional details released via ListServ in coming weeks

More details will follow via NASA ListServ

